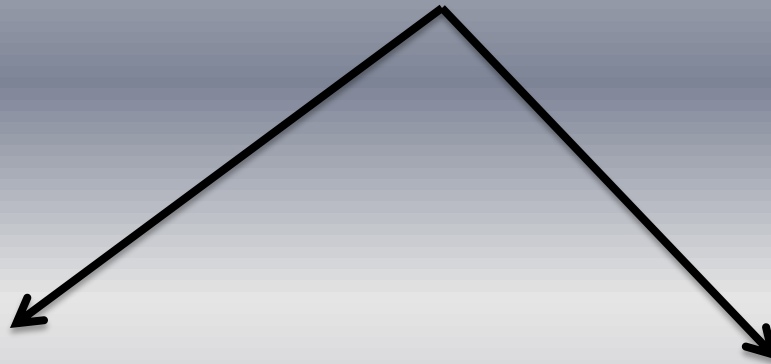


**Gram-Positive Irregular
(shape and staining) Non-
Spore-Forming Bacilli**

Gram-Positive Irregular (shape and staining) Non-Spore-Forming Bacilli

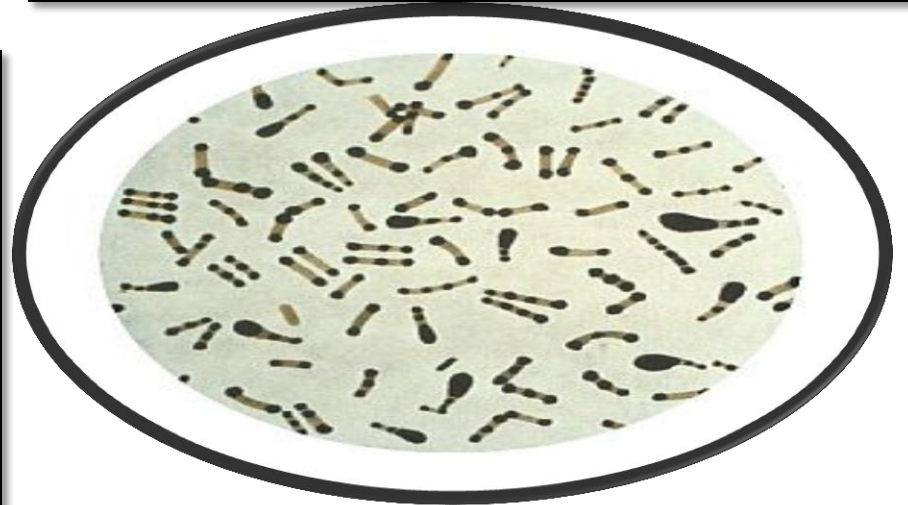
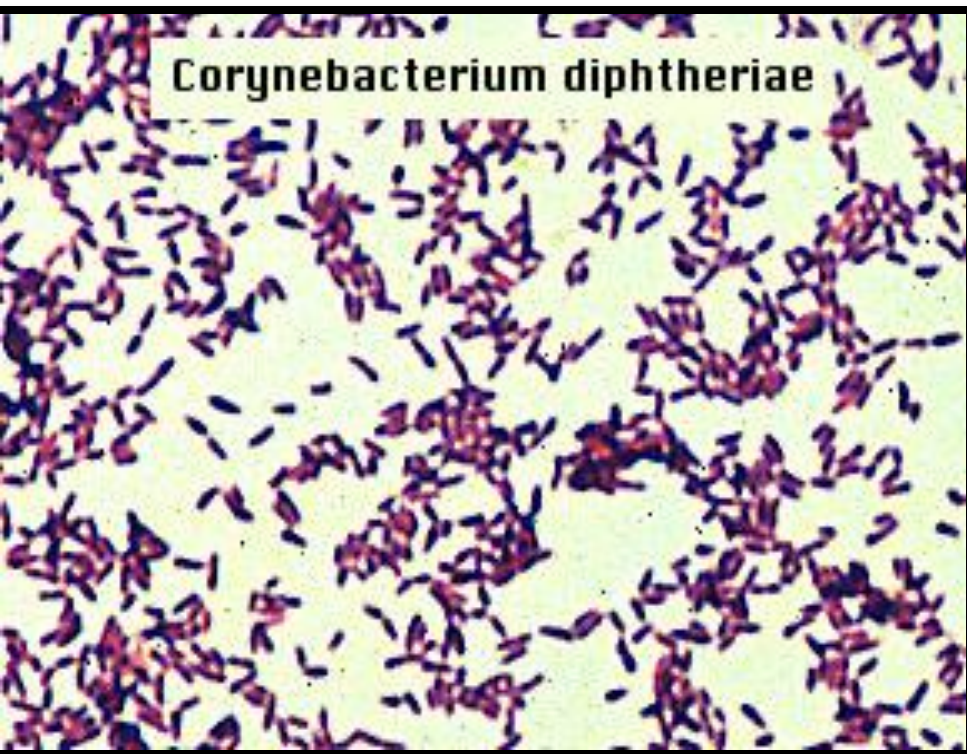


Acid fast bacilli
Mycobacteria

Non-Acid fast bacilli
Corynebacteria

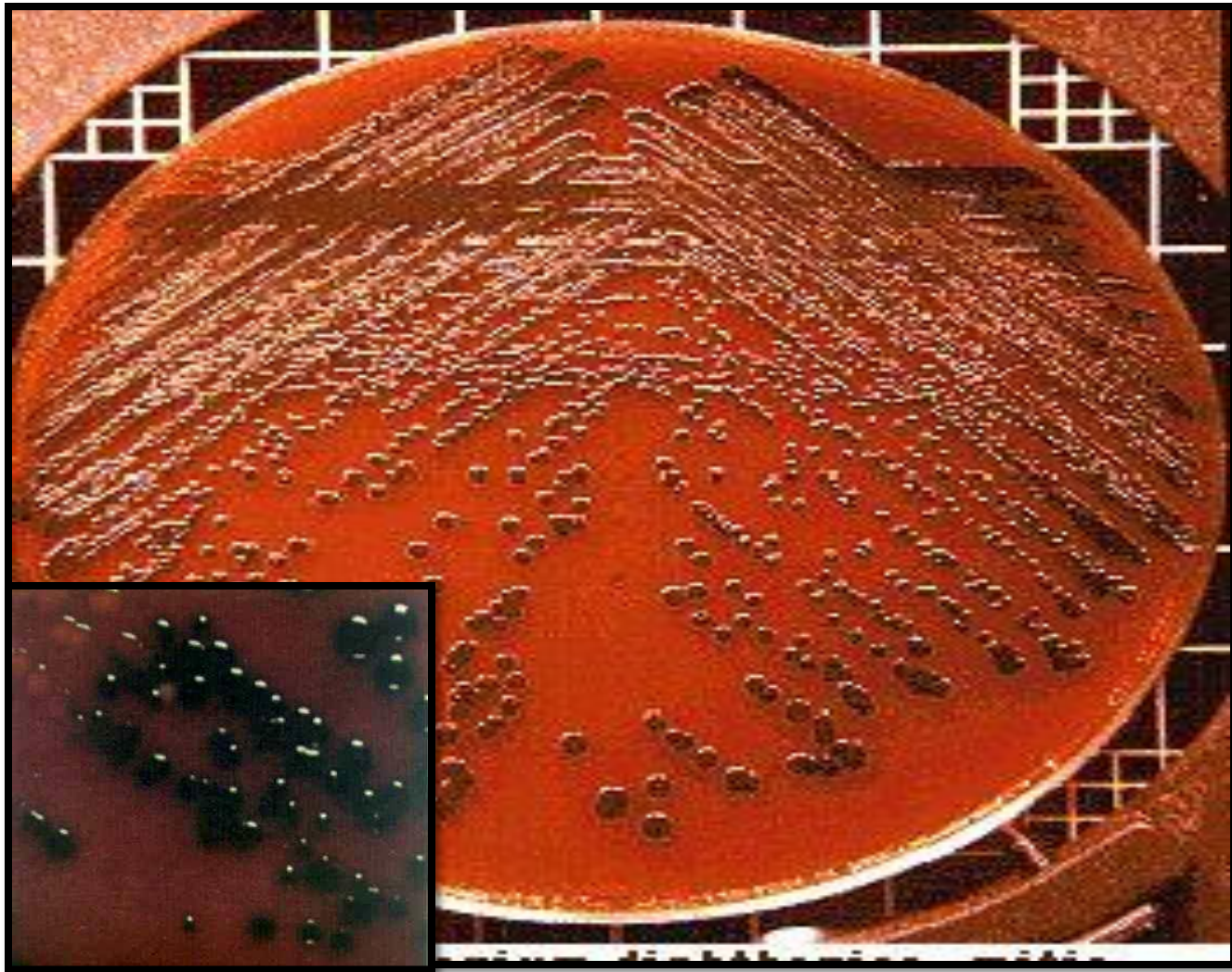
Corynebacteria

C. diphtheriae



****G+ve Chinese-letter morphology in Gram stain***

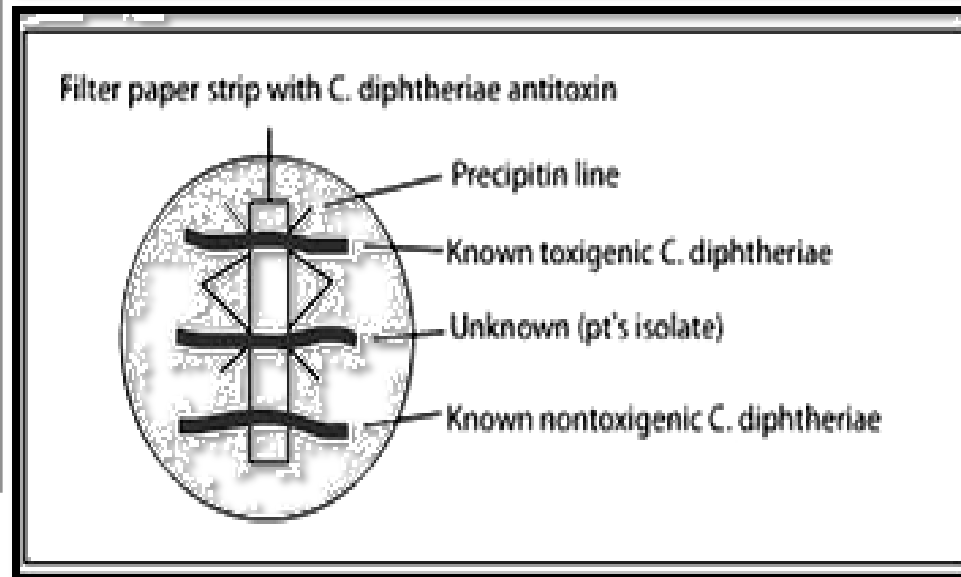
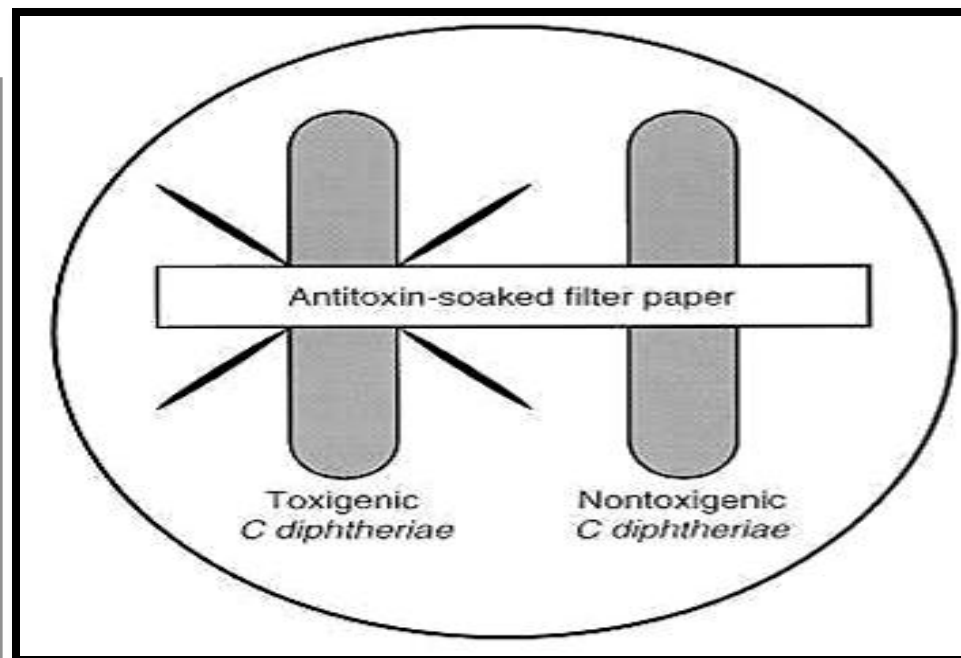
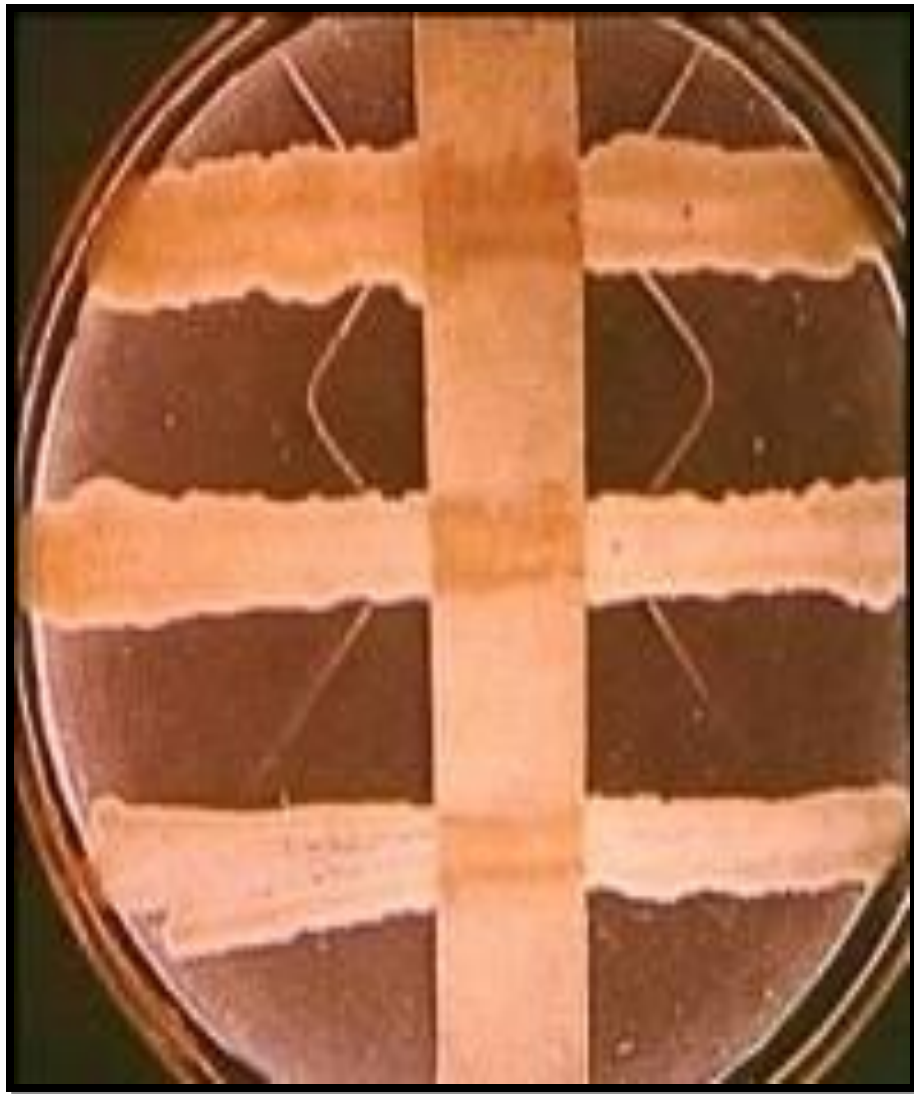
****Metachromatic granules***



**blood tellurite agar (Tinsdale agar) ,
they give gray to black colonies**



- **It ferments glucose and maltose with acid production**



“Elek’s test” (in vitro) prove toxin production

Schick test

(in vivo)

- **Be used to a certain population at risk**

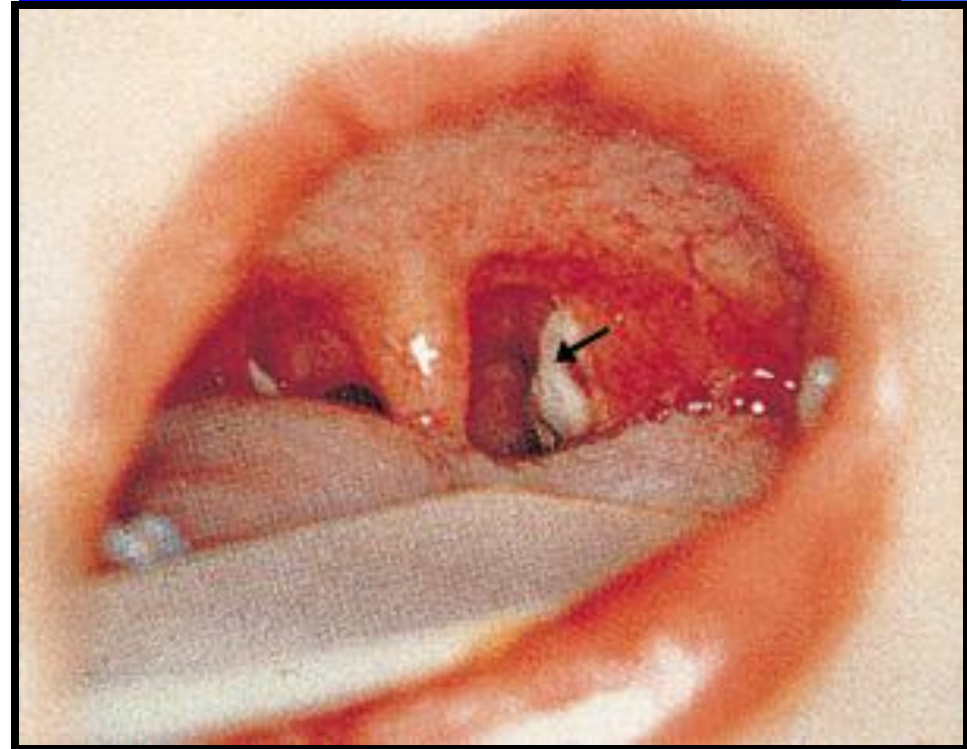
This test involves the injection of a minute amount of the diphtheria toxin under the skin. The absence of a reaction indicates immunity.

Clinical Diseases:

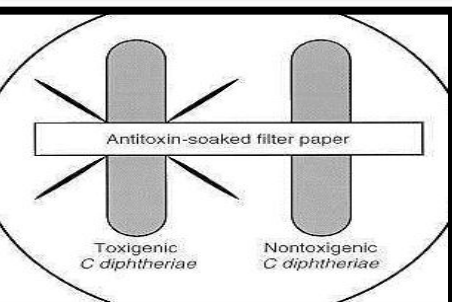
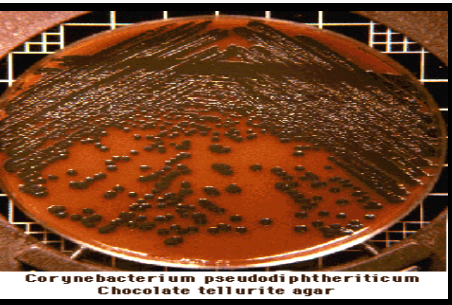
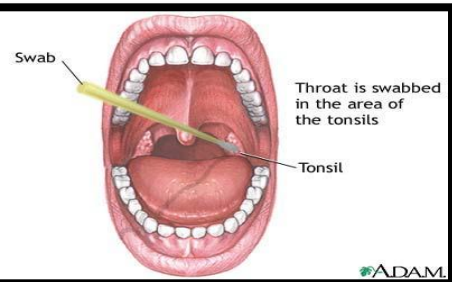
*Respiratory diphtheria

*Cutaneous diphtheria

The cervical lymph nodes enlarge causing oedema of the neck (a classical condition of 'bullneck')



Throat swabs from the membrane are examined as follows:



- Direct smears are stained with gram and methylene blue.
- Gram positive bacilli with the characteristic morphology of diphtheria may be seen.
- Cultures are made on loeffler's serum and blood tellurite media.
- Toxigenicity test is confirmative



Mycobacteria

(Acid-Fast Bacilli)

Mycobacterium tuberculosis

Mycobacterium leprae

Diagnosis

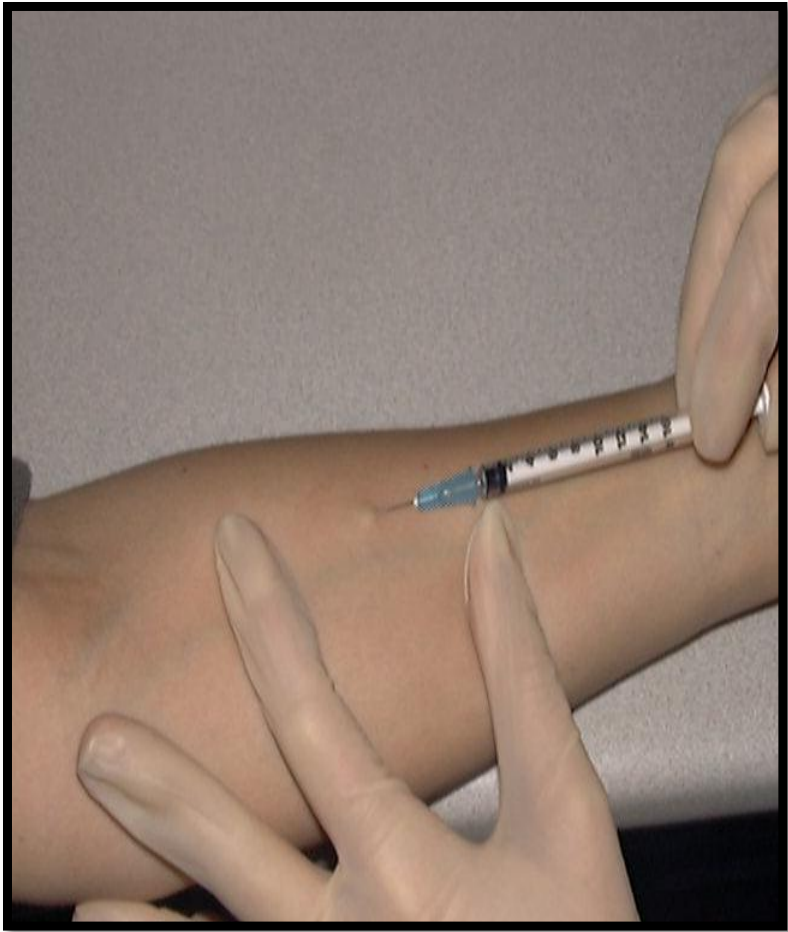
1. *In vivo* or tuberculin testing

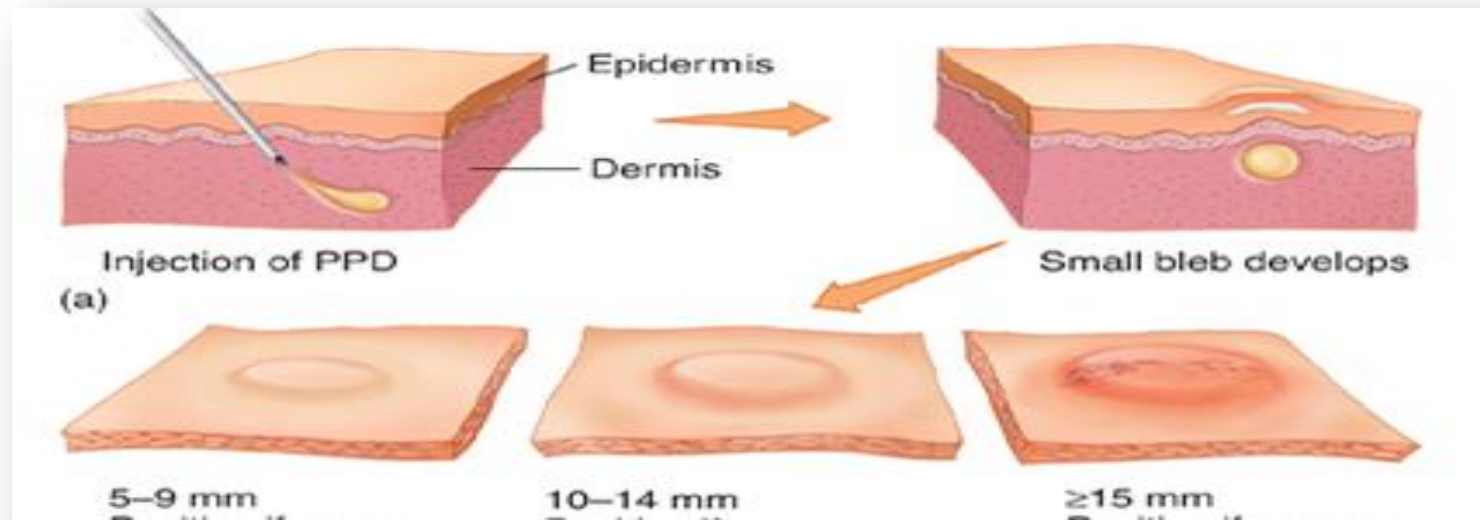
Mantoux test – local intradermal injection of 0.1ml purified protein derivative (PPD); look for red wheal to be formed in 48-72 hours **induration**; established guidelines to indicate interpretation of result based on size of wheal and specific population factors

2. X rays

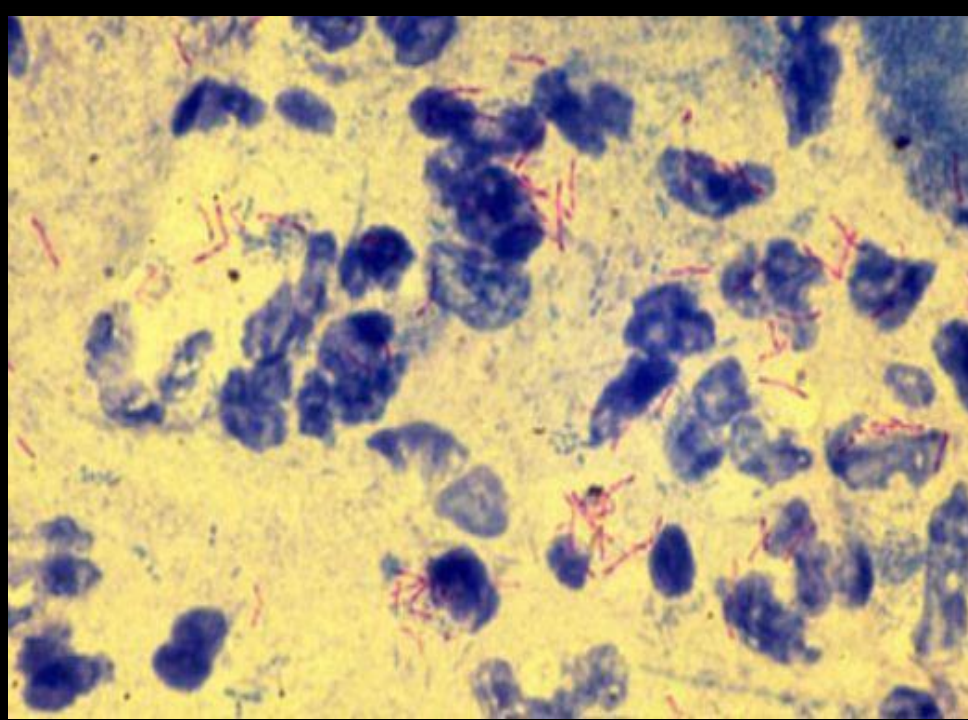
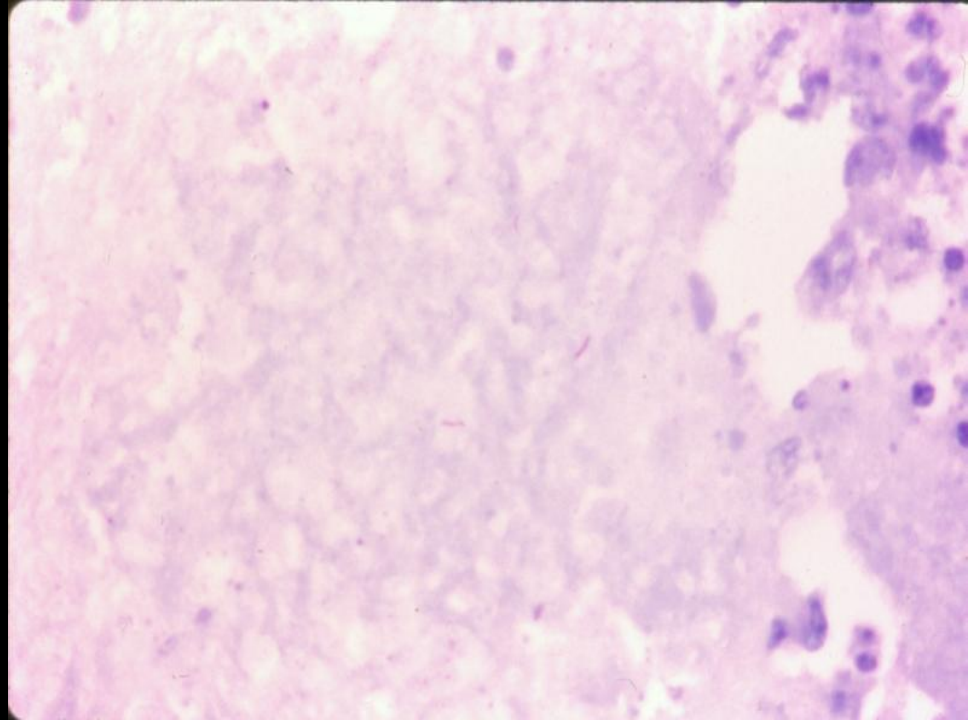
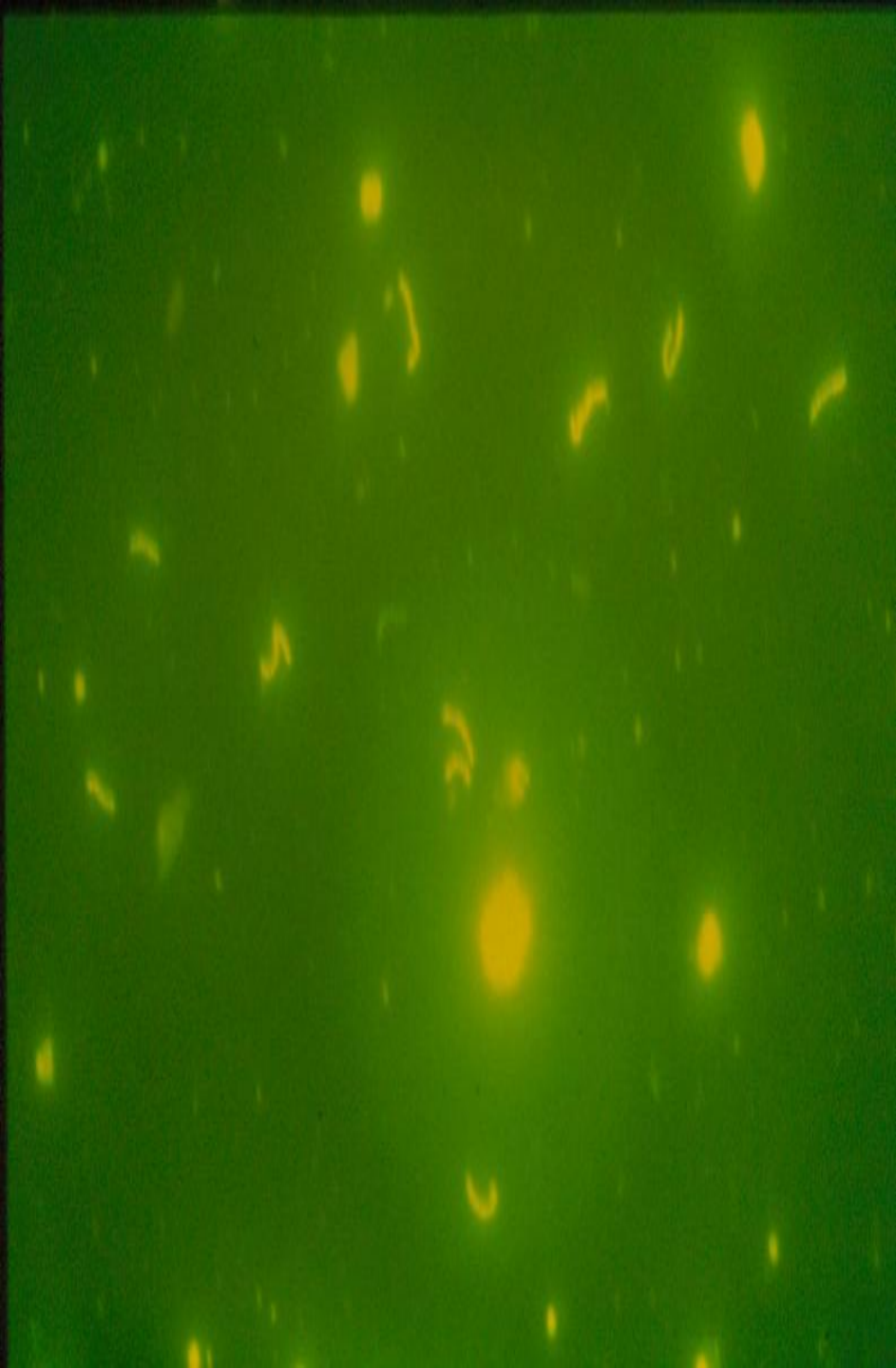
3. Direct identification of acid-fast bacilli in specimen by **Zeihle-Neelsen** stain.

4. Cultural isolation on **LJ media** and biochemical testing





Tuberculin test (by the use of PPD)
patient develops delayed hypersensitivity





Selective media for *M. tuberculosis*
Lowenstein-Jensen media (LJ)